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**Bibliography**

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(19) [Country of Issue] Japan Patent Office (JP)

(12) [Official Gazette Type] Open utility model official report (U)

(11) [Publication No.] JP,5-34680,U

(43) [Date of Publication] May 7, Heisei 5 (1993)

(54) [The name of a design] Connector for printed circuit board

(51) [The 5th edition of International Patent Classification]

H01R 13/648 9173-5E

23/02 K 6901-5E

[Request for Examination] Un-asking.

[The number of claims] 1

[Number of Pages] 2

(21) [Filing Number] An application-for-a-utility-model-patent common 3-97662

(22) [Filing Date] October 16, Heisei 3 (1991)

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[Identification Number] 000102500

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### Summary

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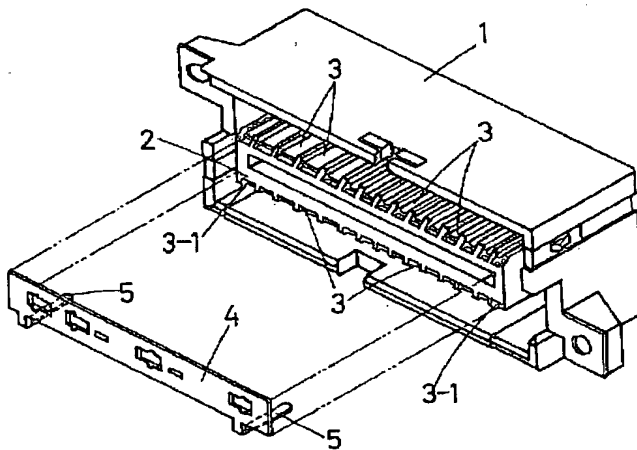
#### (57) [Abstract]

[Objects of the Invention] The thing equipped with the function which discharges to a ground side immediately when an electrification object contacts the front face of a connector.

[Elements of the Invention] The metal electric discharge plate 4 for antistatic is attached in the front face of the connector support block 2 formed in opening of the connector housing 1, the connection child 5 for electric discharge protrudes on the lower both sides of this electric discharge plate 4 at one, this connection child 5 is inserted in the aforementioned contact 3-1 for ground connection at the time of anchoring of the electric discharge plate 4, and it connects with this.

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## CLAIMS

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[Utility model registration claim]

[Claim 1] Contact of a large number which it is held [ a large number ] at a horizontal single tier at connector housing which carried out front part opening, and this opening, and made the rear project a connection terminal area, The connector for printed circuit board characterized by having the connection child who is in the front face of the aforementioned opening, and is united with each aforementioned contact, the electric discharge plate for antistatic arranged in the position which is not buffered, and this electric discharge plate, and connects with the existing ground connection side contact under aforementioned contact.

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## DETAILED DESCRIPTION

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[Detailed explanation of a design]

[0001]

[Industrial Application]

This design is related with the connector for printed circuit board equipped with the function which discharges to a ground side immediately, when an electrification object contacts the front face of a connector.

[0002]

[Description of the Prior Art]

As a connector for printed circuit board equipped with this kind of antistatic function, there is the former (int.cl H01R 13/648), for example, JP,61-172480,U. While this thing is inserted in the point of front opening of connector housing and forms the electric discharge board of a formula, it is what protruded the electric discharge terminal which stands in a row with other contact pins to the ends of this electric discharge board, and is mounted on a printed circuit board, and it is made to connect this electric discharge terminal to the electric conduction pattern by the side of the ground formed in the printed circuit board. Contacting an electric discharge board certainly, if it gets twisted in this composition and an electrification object contacts the connector effective area of \*\*, the charge of an electrification object discharges from an electric discharge terminal to a ground side, and prevents destruction of the internal circuitry by contact of static electricity etc.

[0003]

[Problem(s) to be Solved by the Device]

However, if it was in the conventional connector like \*\*\*\*, since it was necessary to form the ground side electric conduction pattern for connecting with an electric discharge terminal apart from the usual circuit in a printed circuit board side, this kind of cure against electric discharge needed to use the substrate which gave a different printed circuit from a required model and the model which is not required, and was uneconomical.

[0004]

On the other hand, the electric conduction pattern by the side of the ground connected to mounting parts is surely formed during the usual wiring at the printed circuit board, and the contact connected to the electric conduction pattern also at a connector side is arranged.

[0005]

This design is what noted the above point, and the purpose is in offering the connector for printed circuit board which can bring about an antistatic function by connecting the connection child of an electric discharge board to the contact connected to a ground side, without forming a ground side electric conduction pattern in a printed circuit board side separately.

[0006]

[Means for Solving the Problem]

In order to attain the above-mentioned purpose the feature of this design Contact of a large number which it is held [ a large number ] at a horizontal single tier at connector housing which carried out anterior part opening, and this opening, and made the posterior part project a connection terminal area, It is in having had the connection child who is in the front face of the aforementioned opening, and is united with each aforementioned contact, the electric discharge plate for antistatic arranged in the position which is not buffered, and this electric discharge plate, and connects with the existing ground connection side contact under aforementioned contact.

[0007]

[Function]

According to the above composition, if the charged body approaches the effective area of connector housing, an electric discharge plate will be touched and static electricity will flow in the existing ground side contact through a connection child from an electric discharge plate.

[0008]

[Example]

Hereafter, one example of this design is explained in detail with reference to drawing 1 or drawing 3. The connector housing 1 made of synthetic resin which carried out anterior part opening of the connector for printed circuit board in drawing, The connector support block 2 which protrudes in the center of opening of the connector housing 1 at one, and divides opening into two steps of upper and lower sides, The upper and lower sides of the connector support block 2 are equipped with the contact 3 of a large number arranged at the horizontal single tier, respectively, and pin terminal section 3a installed in the posterior part of each contact 3 is made to project at the posterior part of the aforementioned connector housing 1 in two steps, and it is made to connect with the printed circuit board which is not illustrated. In addition, the contact 3-1 arranged among each contact 3 at the lower both sides of the aforementioned connector support block 2 is contact for ground connection, and is connected to the electric conduction pattern by the side of the ground formed in a printed circuit board side.

[0009]

The metal electric discharge plate 4 for antistatic is attached in the front face of the aforementioned connector support block 2. The connection child 5 for electric discharge protrudes on the lower both sides of this electric discharge plate 4 at one, this connection child 5 is inserted in the aforementioned contact 3-1 for ground connection at the time of anchoring of the electric discharge plate 4, and it connects with this.

[0010]

In the above composition, when an electrification object approaches opening of the connector housing 1, this electrification object will contact the electric discharge plate 4 which is the foremost part, and will discharge static electricity to a ground side through the connection child 5 and the contact 3-1 for ground connection.

[0011]

In addition, six in drawing is a spring for carrying out the pressure welding of the contact of the other party connector which is arranged at the opening upper part and the inner pars basilaris ossis occipitalis of the aforementioned connector housing 1, and is inserted in this and which is not illustrated to a contact 3 side.

[0012]

[Effect of the Device]

In the connector for printed circuit board which starts this design as explained

above, if the charged body approaches the effective area of connector housing, an electric discharge plate will be touched, and since static electricity flows in the existing ground side contact through a connection child from an electric discharge plate, it can bring about an antistatic function, without forming the electric conduction pattern by the side of the ground for electric discharge in a printed circuit board side like before, and has the advantage which is rich in versatility.

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**DESCRIPTION OF DRAWINGS**

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[Brief Description of the Drawings]

[Drawing 1] It is the decomposition perspective diagram of the printed circuit board concerning this design.

[Drawing 2] It is the cross section showing an assembly state same as the above.

[Drawing 3] It is the front view in an assembly state same as the above.

[Description of Notations]

1 Connector Housing

3 Contact

3-1 Ground Connection Side Contact

4 Electric Discharge Plate

5 Connection Child

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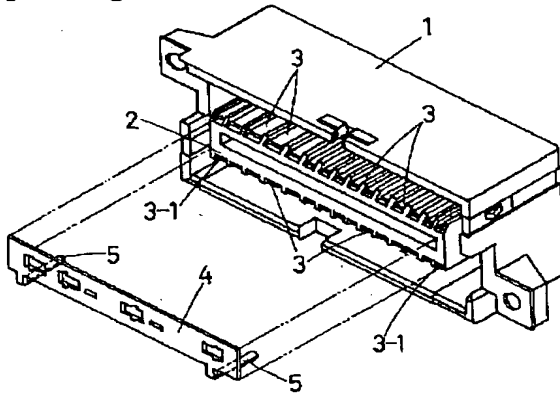
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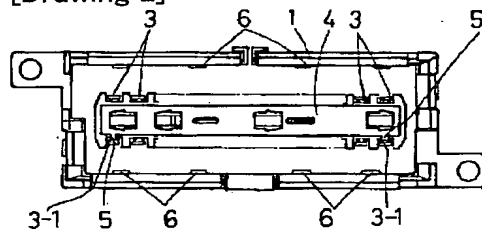
## DRAWINGS

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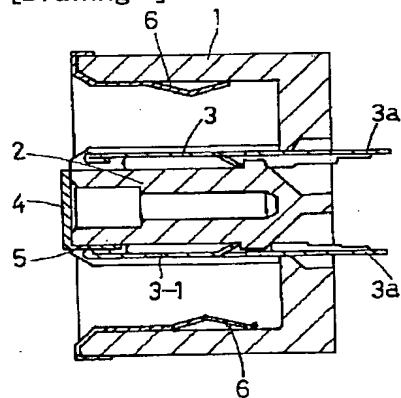
[Drawing 1]



[Drawing 2]



[Drawing 3]



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[Translation done.]

(19)日本国特許庁(J P)

(12) 公開実用新案公報(U)

(11)実用新案出願公開番号

実開平5-34680

(43)公開日 平成5年(1993)5月7日

(51)Int.Cl.<sup>5</sup>

H 0 1 R 13/648  
23/02

識別記号

庁内整理番号

9173-5E

K 6901-5E

F I

技術表示箇所

審査請求 未請求 請求項の数1(全 2 頁)

(21)出願番号 実願平3-97662

(22)出願日 平成3年(1991)10月16日

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ムケイ株式会社内

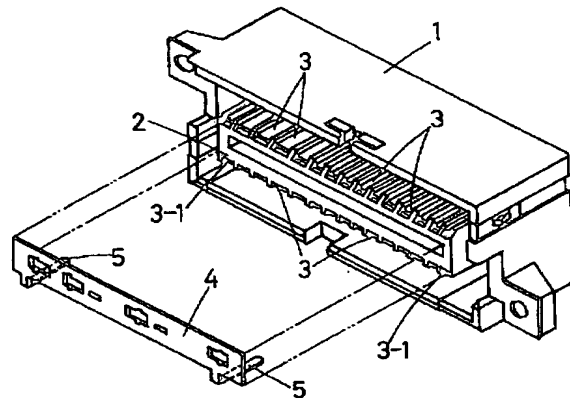
(74)代理人 弁理士 田中 雅雄

(54)【考案の名称】 プリント基板用コネクタ

(57)【要約】

【目的】 帯電物がコネクタ前面に接触した場合に直ちにアース側に放電する機能を備えたもの。

【構成】 コネクタハウジング1の開口部に設けたコネクタ支持ブロック2の前面には帯電防止用の金属製の放電プレート4が取付けられ、この放電プレート4の下部両側には放電用の接続子5が一体に突設され、放電プレート4の取付け時にこの接続子5が前記アース接続用コンタクト3-1に差し込まれ、これに接続される。





1

【実用新案登録請求の範囲】

【請求項1】 前部開口したコネクタハウジングと、この開口部に横一列に保持され、かつ後部に接続端子部を突出させた多数のコンタクトと、前記開口部の前面にあって前記各コンタクトと緩衝しない位置に配置された帯電防止用の放電プレートと、この放電プレートに一体化され、かつ前記コンタクト中の既存のアース接続側コンタクトに接続する接続子とを備えたことを特徴とするプリント基板用コネクタ。

【図面の簡単な説明】

2

\*【図1】 本考案に係るプリント基板の分解斜視図である。

【図2】 同上組立状態を示す断面図である。

【図3】 同上組立状態における正面図である。

【符号の説明】

1 コネクタハウジング

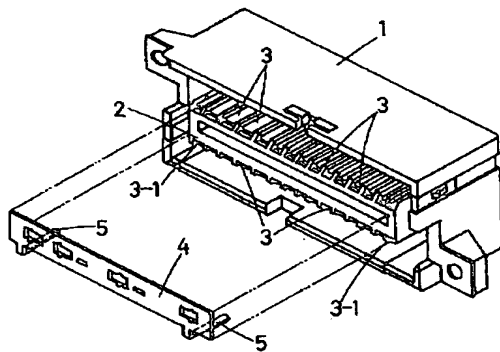
3 コンタクト

3-1 アース接続側コンタクト

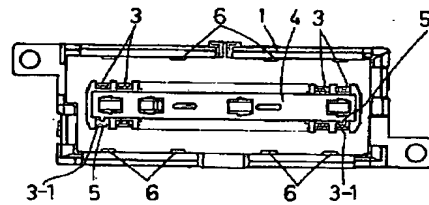
4 放電プレート

\*10 5 接続子

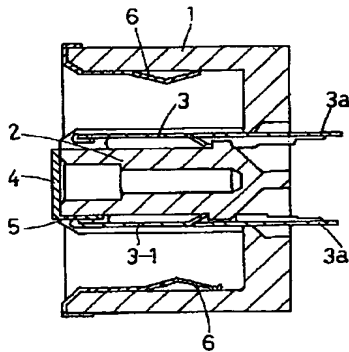
【図1】



【図2】



【図3】



## 【考案の詳細な説明】

## 【0001】

## 【産業上の利用分野】

本考案は帯電物がコネクタ前面に接触した場合に直ちにアース側に放電する機能を備えたプリント基板用コネクタに関する。

## 【0002】

## 【従来の技術】

この種の帯電防止機能を備えたプリント基板用コネクタとして、従来例えば実開昭61-172480号公報（int. cl H<sup>01</sup>R 13/648）がある。このものは、コネクタハウジングの前面開口の先端部に差し込み式の放電板を設けるとともに、この放電板の両端に他のコンタクトピンと並列してプリント基板上に実装される放電端子を突設したもので、この放電端子をプリント基板に形成されたアース側の導電パターンに接続するようにしている。この構成によればのコネクタ開口面に帯電物が接触すると確実に放電板に接触し、帯電物の電荷は放電端子からアース側に放電し、静電気の接触による内部回路の破壊などを防止する。

## 【0003】

## 【考案が解決しようとする課題】

しかしながら、上述の如き従来のコネクタにあつては、プリント基板側に通常の回路とは別に放電端子と接続するためのアース側導電パターンを形成する必要があるため、この種の放電対策が必要な機種と必要でない機種とは異なったプリント配線を施した基板を使用する必要があり、不経済であつた。

## 【0004】

一方、プリント基板には通常の配線中に実装部品に接続されるアース側の導電パターンが必ず形成されており、コネクタ側にもその導電パターンに接続されるコンタクトが配置されている。

## 【0005】

本考案は以上の点に着目したもので、その目的は、アース側に接続されるコンタクトに放電板の接続子を接続しておくことによって、プリント基板側にアース

側導電パターンを別途形成することなく帯電防止機能をもたらすことの出来るプリント基板用コネクタを提供することにある。

【0006】

【課題を解決するための手段】

上記の目的を達成するために本考案の特徴は、前部開口したコネクタハウジングと、この開口部に横一列に保持され、かつ後部に接続端子部を突出させた多数のコンタクトと、前記開口部の前面にあつて前記各コンタクトと緩衝しない位置に配置された帯電防止用の放電プレートと、この放電プレートに一体化され、かつ前記コンタクト中の既存のアース接続側コンタクトに接続する接続子とを備えたことにある。

【0007】

【作用】

以上の構成によれば、帯電体がコネクタハウジングの開口面に近付くと放電プレートに触れ、静電気は放電プレートから接続子を通じて既存のアース側コンタクトに流れる。

【0008】

【実施例】

以下、本考案の一実施例を図1ないし図3を参照して詳細に説明する。図におけるプリント基板用コネクタは、前部開口した合成樹脂製のコネクタハウジング1と、コネクタハウジング1の開口中央に一体に突設され、開口部を上下二段に分割するコネクタ支持ブロック2と、コネクタ支持ブロック2の上下にそれぞれ横一列に配置された多数のコンタクト3を備えており、各コンタクト3の後部に延設されたピン端子部3aを前記コネクタハウジング1の後部に二段に突出させ、図示しないプリント基板に接続するようにしている。なお、各コンタクト3のうち、前記コネクタ支持ブロック2の下部両側に配置されるコンタクト3-1はアース接続用のコンタクトであり、プリント基板側に形成されるアース側の導電パターンに接続される。

【0009】

前記コネクタ支持ブロック2の前面には帯電防止用の金属製の放電プレート4

が取付けられている。この放電プレート4の下部両側には放電用の接続子5が一体に突設され、放電プレート4の取付け時にこの接続子5が前記アース接続用コンタクト3-1に差し込まれ、これに接続される。

【0010】

以上の構成において、帯電物がコネクタハウジング1の開口部に接近すると、この帯電物は最前部である放電プレート4に接触し、静電気を接続子5およびアース接続用コンタクト3-1を通じてアース側に放電することになる。

【0011】

なお、図中6は前記コネクタハウジング1の開口上部および内底部に配置され、これに差し込まれる図示しない相手側コネクタのコンタクトをコンタクト3側に圧接するためのバネである。

【0012】

【考案の効果】

以上説明したように本考案に係るプリント基板用コネクタでは、帯電体がコネクタハウジングの開口面に近付くと放電プレートに触れ、静電気は放電プレートから接続子を通じて既存のアース側コンタクトに流れるため、従来のように放電用のアース側の導電パターンをプリント基板側に形成することなく帯電防止機能をもたらすことができ、汎用性に富む利点がある。